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therefore, evident, that an old root-stock will form a conglomeration of branches, and will have a coral-like appearance when the bulblets are removed.

It is not quite easy to decide from actual observation, whether the buds morphologically belong to the bulblets, or to the axis on which the latter are inserted. In the former case, we should have one of the rather rare occurrences of abnormal bud-production from petioles. But, I think, we can plainly distinguish a narrow zone of tissue in the bulblet at the point of its insertion, that morphologically belongs to the axis. But this zone, from which the incipient bud is differentiated, is, together with its bulblet, very easily detached from its axis, and then gives rise to a new individual plant.

EXPLANATION OF PLATE XXIII.–(For figure of entire plant see Gray's Struct. Bot. p. 204, where, however, the thin portion of the petiole ought to be represented as proceeding from the *top* of the bulblet.

Fig. 1. longitud. sect. of last year's bulblet with bud at the base (December). Fig 2, cross-sect. of the same.—Fig. 3, the same with elongating axis; *lf*, leaf; *br*, bracts.—Fig.4, longitud. sect. of.vigorous shoot (in December) separated from root-stock, the large lower bracts removed; *rt*, root breaking through overlying tissue; *bb*, new bulblets in axils of upper bracts; *pt*, petiole-bases (the blades belonging to them are cut off); *a*, end of axis, all magnified. Fig 5, cluster of bulblets between two bracts (in December), taken from the axil of a lower bract on shoot in Fig. 4. Fig. 6,[*] sections of petioles in December, and Fig. 7, in April: *a*, longitud. sections showing bud at base; *b*, cross-section from base, *c*, from middle and *d*, from top of thickened portion; *e*, from upper (thin) part of petiole.

New or Little-Known Ferns of the United States. No. 12.

By D. C. EATON.

36. *Polypodium Swartzii*, Baker.—Rootstock very long and slender, chaffy with narrow ferruginous scales; fronds scattered, short-stalked, thin-membranaceous, smooth, oval to linear-lanceolate, ½ to 5 inches long, 3 to 5 lines broad, entire or sinuate; veinlets visible, reticulated, paracostal areoles long and narrow, next ones much larger, oblique, outer ones much smaller and irregular; fertile fronds longer than the sterile, and soriferous on short included veinlets in the largest areoles only, the sori thus in a single row each side of the midrib. Syn. Fil., p. 357. *P. serpens*, Swartz, Mettenius, Hooker, but not the *P. serpens* of Forster.

Climbing on stems of shrubs and small trees, often several feet above the ground; at the north end of Key Largo, Florida; A. H. Curtiss, Feb. 21, 1882.

I have to thank Mr. Davenport for a specimen of this interesting little fern. It was discovered in Santo Domingo nearly two hundred years ago by Plumier, who gave but a slightly exaggerated figure of it under the name of "*Lingua Cervina scandens, angustis et undosis foliis.*" He remarked that the fronds are all drooping because of their very slender stalks. Linnaeus gave no account of this plant; but it has been recognized by most later writers on the West India ferns. I have specimens from Santo Domingo (Weinland, 33), Cuba (Wright, 799) and Porto Rico (Garber, 41).

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[*] Fig. 6, the lettering of which was accidentally omitted, is to the right of Fig. 7.

Mr. Davenport informs me that Mr. Curtiss has collected a large stock of this fern, and will distribute it in his fascicles for 1882, which will probably contain also *Asplenium serratum*, *Taenitis lanceolata* and the royal palm, *Oreodoxa regia.*

37. *Pellaea densa*, Hooker.—The range of this fern is greatly extended by Prof. O. D. Allen and his son, Mr. J. A. Allen, who found it on Mount Albert, in Lower Canada, July 30, 1881. It grew exposed to the sun on the steep walls of ravines at 2,000 to 3,000 feet elevation. Mt. Albert is near West Longitude 69° 30′, N. Lat. 47° 15′. The same plant is No. 819 of Mr. Cusick's Oregon distribution.

38. *Phegopteris calcarea*, Fée.—A second station for this very rare plant is at Decorah, Winneshiek Co., Iowa, where it was found last season "in the crevices of the north side of a limestone bluff" by Mr. E. W. Holway. My specimens were kindly sent by Mr. J. C Arthur, of Charles City, Iowa.

39. *Aspidium aculeatum*, var. *scopulinum*, Eaton.—This has been reported in the BULLETIN from Utah, by Mr. M. E. Jones. The Messrs. Allen collected it July 26, 1881, on the side of a rocky ravine on Mount Albert, Lower Canada. Mr. Suksdorf sends it also from Mt. Adams, Washington Territory. Some of Mr. Lemmon's plants seem to show so gradual a transition of this into *A. mohrioides*, that it would look as if the latter would have to be considered an extreme form of *A. aculeatum.*

40. *Aspidium trifoliatum*, Swz.—Mr. Curtiss has now distributed fine specimens of this tropical fern. Mr. Davenport has received from Dr. Engelmann a specimen collected long ago in Western Texas by Lindheimer. That region of Western Texas has scarcely been visited by botanists for many years, and not a few of our rarest ferns are found principally there.

41. *Woodsia obtusa*, var. GLANDULOSA, is the name suggested by both Mr. C. E. Faxon and myself for the form called *W. Plummerae* by Mr. Lemmon. The involucre is exactly that of *W. obtusa*, the habit scarcely differs, and the glandular pubescence is so variable, often almost lacking, that no reliance can be placed upon it for a specific distinction. This fern has been badly mixed by collectors with *W. Mexicana.* The affinity of the latter is rather with *W. scopulina.*

42. *Ophioglossum vulgatum*, L.—Falcon Valley, Washington Territory, Suksdorf, 1881. Mr. Davenport kindly sends me this, and with it very immature plants of what is probably the same thing from near San Diego, just collected by Dr. Parry.

Torenia Asiatica is a pretty little hot-house plant of trailing habit, which will thrive excellently well out-of-doors during the summer. It has a prismatic calyx, two-lipped, and with sharp angles. The corolla is "short, funnel-form or tubular, with an inflated throat, 4-lobed, the upper lobe (sometimes slightly notched) outermost in the bud." The extreme portion of all but the upper lobe is of a deep